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IS 14302 (1995): Beach sand silimanite for refractory industry [MTD 13: Ores and Raw Materials]



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उच्चतापसह उद्योग के लिये पुलिन
मिट्टी सिलिमेनाइट — विशिष्ट

Indian Standard

**BEACH SAND SILIMANITE FOR
REFRACTORY INDUSTRY —
SPECIFICATION**

UDC 666.762.15

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Ores and Raw Materials Sectional Committee had been approved by the Metallurgical Engineering Division Council.

Silimanite is one of the three minerals, having the same chemical composition ($\text{Al}_2\text{O}_3 \cdot \text{SiO}_2$), but differ in physical properties. It is used in the manufacture of high alumina refractory products.

Silimanite is available in India in the lumpy form or as beach sand. However, the lumpy reserves are dwindling. In view of this, only beach sand silimanite is presently being specified in this standard.

No marking clause is being specified in this standard as the silimanite is supplied loose.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

BEACH SAND SILIMANITE FOR REFRACTORY INDUSTRY — SPECIFICATION

1 SCOPE

This standard covers the requirements of beach-sand silimanite used in the manufacture of high alumina refractory products.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

<i>IS No.</i>	<i>Title</i>
1335 : 1979	Method for direct determination of alumina in refractory materials (<i>first revision</i>)
1528	Methods of sampling and physical tests for refractory materials
(Part 1) : 1980	Determination of pyrometric cone equivalent (PCE) or softening point (<i>second revision</i>)
(Part 7) : 1974	Method of sampling and criteria for conformity (<i>first revision</i>)

3 TERMINOLOGY

3.1 For the purpose of this standard, the following definitions shall apply.

3.2 Silimanite

- a) It is one of the three minerals having the same composition (Al_2O_3 , SiO_2), but has different crystalline forms, or
- b) A rock containing a major proportion of this material.

3.3 Pyrometric Cone Equivalent (PCE)

The number (or numbers) of the standard cone (or cones) which bends at the temperature nearest to

that at which the test cone bends under the standardized conditions of the refractoriness test.

4 REQUIREMENTS**4.1 Chemical Composition**

The material when analyzed in accordance with IS 1335 : 1979 shall comply with the requirements given in Table 1. For the other constituents for which the method of test is not specified in IS 1335 : 1979, the method of test shall be agreed to between the purchaser and supplier.

Table 1 Chemical Composition of Beach Sand of Silimanite

Sl No. (1)	Constituent (2)	Requirement, Percent (3)
i)	Al_2O_3 , <i>Min</i>	58
ii)	Fe_2O_3 , <i>Max</i>	0.75

4.2 Physical Test

The pyrometric cone equivalent (PCE) when determined in accordance with IS 1528 (Part 1) : 1980 shall not be less than 37.

5 SIZE

Sieve analysis when carried out shall meet the following:

<i>Size (microns)</i>	<i>Percentage, Max</i>
+420	5
-70	3

6 SAMPLING

The material shall be sampled in accordance with IS 1528 (Part 7) : 1974.

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